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ABSTRACTS

MUSSEL FISHERY IN NATURA 2000 SITES – A SUCESS STORY FROM DENMARK

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Introduction

Several important blue mussel (*Mytilus edulis*) seed collecting grounds are located within Natura 2000 sites designated to protect a number of endangered, vulnerable or characteristic animals, birds, plants and natural habitats. There have therefore been concerns among various stakeholders such as fisheries organizations, managers and environmental NGOs in relation to how the mussel seed collection fisheries can be allowed without hampering the designated species and habitats.

In 2011 The Danish Ministry of Environment and Food initiated a process that should ensure sustainable development of the mussel and oyster fisheries, which at the same time should meet the EU Species and Habitats Directive. The result of this process was the implementation of the Danish Mussel Policy in 2013, which ensures that the regulations and control of the shellfish fisheries in Natura 2000 areas are in place.

The Mussels Policy has pointed out four key ecosystem components (eelgrass, blue mussels, macroalgae and benthic fauna). To ensure a sustainable mussel and oyster fishery within the Natura 2000 sites a cumulative area impact of max. 15% is accepted for each of the ecosystem components blue mussels, macro algae and benthic fauna, whereas for eelgrass no area impact is allowed. To assess the impact caused by the shellfish fisheries knowledge of the spatial distribution and regeneration time for each of the ecosystem components are needed along with documentation of where the fishery is taken place within each Natura 2000 site.

Method

Monitoring spatial distribution of eelgrass and macro algae: Spatial distribution of eelgrass and macroalgae was mapped by point measurements, where each point measurement was based on video analyses of a 100 m transect running parallel to the coast followed by a GIS-analysis using the interpolation method (spline with barriers), where the depth contour was used as barriers. For eelgrass the data monitored by video were together with 9 monitored parameters (physical exposure from waves and currents, organic content in the sediment, frequency of resuspension events, light availability at the sea bed, oxygen conditions, presence of opportunistic macroalgae, presence of non-opportunistic loosely attached macroalgae, presence of lugworm and presence of eelgrass beds) used in a site selection GIS tool that highlights areas with potential for eelgrass recovery (Canal-Vergés et al. 2016, Flindt et al. 2016).

Documentation of mussel fishery: Along with the implementation of the Danish Mussel Policy, mussel and oysters fishery vessels are obligated to have a "black box" installed if they want to fish in Natura 2000 sites. The black box system logs the position of the vessel every 10. second and register any activity of the winch, indication either start or end of fishing. The black box data for all vessels are transferred once a day to a server in The Danish Ministry of Environment and Food and then processed by DTU Aqua to assess the impacted area caused by the mussel fishery in each Natura 2000 site.

Conclusion

The presentation will focus on how objectives of the Mussel Policy e.g. sustainable quotas, maximum of 15% cumulative areal impact and protection of eelgrass have been translated into research and development efforts, which have ensured the scientific knowledge for allowing and insuring mussel seed fishery without hampering the designated species and habitats in the affected Natura 2000 sites. Furthermore, an outline of future perspectives for insuring scientific documentations of the shellfish fisheries in Natura 2000 sites will be presented.

References

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